



User Manual 用户手册



JP Fence Screw Type Distributed I/O

PROFINET protocol
Remote IO Module
Distributed IO Module

CATALOGUE

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1.Preface

1.1 Document Usage Instructions

This document describes the product's functional specifications, installation, operation, and settings, as well as relevant network protocol content. This document is only intended for use by trained electrical automation engineers.

(1) Disclaimer

The author has conducted necessary checks on the document. However, as the product evolves, the document may contain technical parameter or editing errors. We reserve the right to make adjustments and modifications without prior notice to users.

(2) Trademarks

PROFINET® is a registered trademark of the PI organization.

(3) Patent Notice

The designer of this product has applied for patent protection for the product's appearance and technical implementation methods. Any attempt to copy, imitate, or reverse engineer may violate the law.

(4) Copyright

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1.2 Safety Precautions

This product is a professional device for industrial use and should only be operated by personnel with electrical operation experience. Please read this manual carefully before use and follow the instructions to avoid personal injury or product damage.

This product is designed to meet IP20 protection standards and must be installed in a distribution cabinet with dust-proof and moisture-proof functions during use.

1.3 Document History

Version	Date	Explanation
V1.0	2023.02.10	First release

1.4 Reference document

《IEC11631-22007 Programmable controllers –Part 2:Equipment requirements and tests》；

《IEC/TR 61158 Industrial Communication Network - Fieldbus Specification》；

《IEC61784-1Industrial Communication Network - Industry Standards Part 1: Fieldbus Standards》；

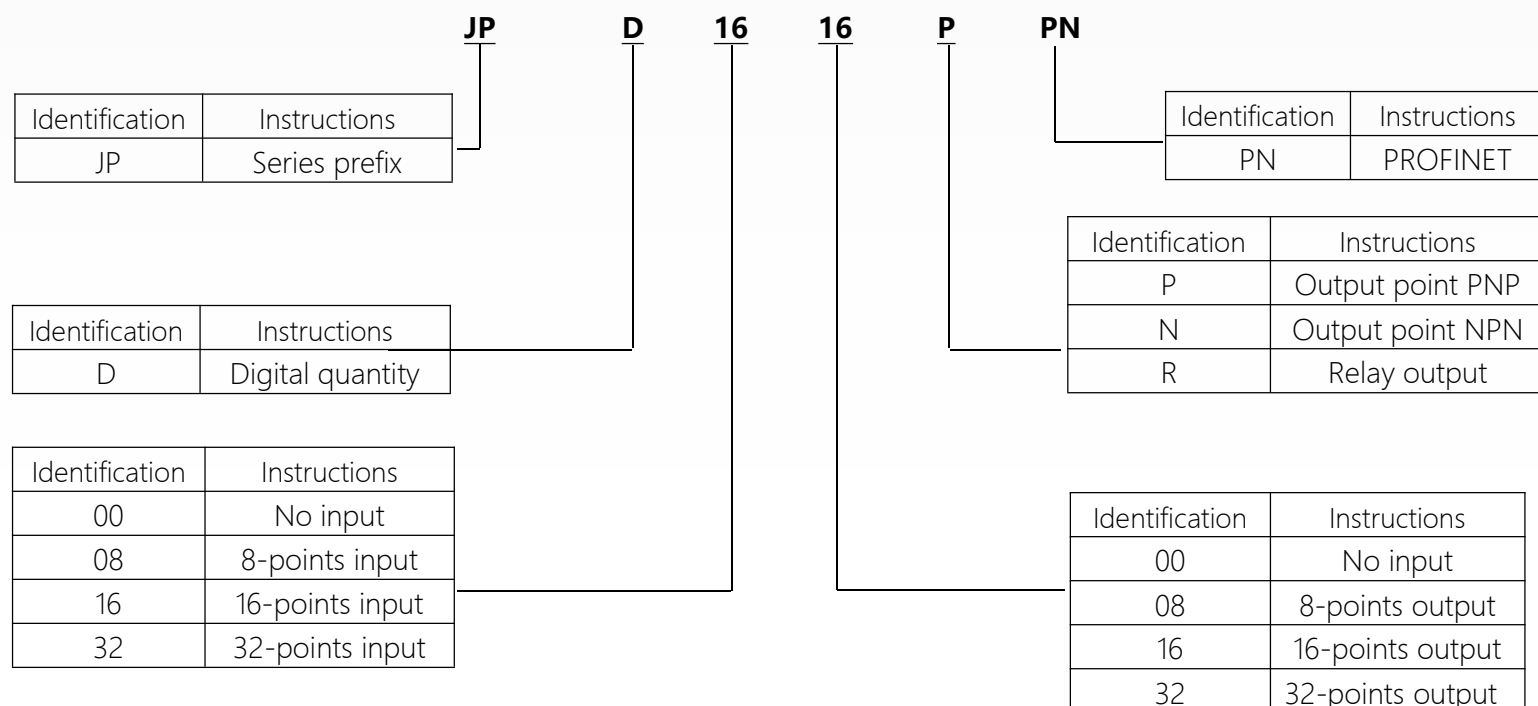
《PNO-7.352, PROFINET IO Device Integration, Guideline for PROFINET, Version 1.0, October 2014,PROFIBUS & PROFINET International, Order Number 7.352》



2.Product Overview

2.1 Model List

The JP-PN series of remote I/O products support the high-performance PROFINET RT bus communication protocol. Through the digital integrated in the module body, they can directly provide high-performance input and output functions without the need for other PROFINET bus couplers.



Note: The input and output types of the 8-in-8-out module are consistent. For the other models, both PNP and NPN input points are supported.

Number	Model number	Explanation
1	JP-D0808P-PN	Digital quantity 8 input and 8 output, PNP, PROFINET slave station interface 2×RJ45
2	JP-D0808N-PN	Digital quantity 8 input and 8 output, NPN, PROFINET slave station interface 2×RJ45
3	JP-D1600-PN	Digital quantity 16 points input, PNP & NPN, PROFINET slave station interface 2×RJ45
4	JP-D0016P-PN	Digital quantity 16 points output, PNP, PROFINET slave station interface 2×RJ45
5	JP-D0016N-PN	Digital quantity 16 points output, NPN, PROFINET slave station interface 2×RJ45
6	JP-D3200-PN	Digital quantity 32 points input, PNP & NPN, PROFINET slave station interface 2×RJ45
7	JP-D0032P-PN	Digital quantity 32 points output, PNP, PROFINET slave station interface 2×RJ45
8	JP-D0032N-PN	Digital quantity 32 points output, NPN, PROFINET slave station interface 2×RJ45
9	JP-D1616P-PN	Digital quantity 16 input and 16 output, PNP, PROFINET slave station interface 2×RJ45
10	JP-D1616N-PN	Digital quantity 16 input and 16 output, NPN, PROFINET slave station interface 2×RJ45
11	JP-D0008R-PN	Relay 8 points output, 5A 250VAC/30VDC, PROFINET slave station interface 2×RJ45
12	JP-D0016R-PN	Relay 16-point output, 5A 250VAC/30VDC, PROFINET slave station interface 2×RJ45

Table 1 PROFINET Remote I/O Module

2.2 JP-PN Specification Parameters

This article only provides explanations for the product specification parameters of JP-PN. For the specification parameters of other models, please contact your supplier for information.

2.2.1 DI specification

The specifications for digital input (DI) are shown in Table 2.

Number	Project	Specification
1	Number of channels	16
2	Access type	2 bytes
3	Ton	Type. 18uS / Max. 35uS
4	Toff	Type. 135uS / Max. 250uS
5	Input type	Source type or leakage type
6	Input connector	E-CON connector
7	Rated input voltage	24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
8	"0" signal level	-3...+5 V (IEC 61131-2, type 2)
9	"1" signal level	15...30 V (IEC 61131-2, type 2)
10	Input current	Typ. 10mA/Ch (IEC 61131-2, type 2)
11	Electrical isolation	Input/Control Area:500V DC

Table2 Specifications for Digital Input Quantity

2.2.2 DQ Specification

The specifications and parameters of the MOSFET digital output (DQ) are shown in Table 3.

Number	Project	Specification
1	Number of channels	16
2	Access type Ton	2 bytes
3	Toff	Type. 12uS / Max. 25uS
4	Output type	Type. 10mS / Max. 20mS (空载)
5	Output connector	Source type or leakage type
6	Load type	Barbed screw connector
7	Rated output voltage	Pure resistive, inductive, bulb 24 V DC (-15 %/+20 %), (IEC 61131-2, type 2)
8	Maximum output current	Max. 0.5 A /Ch, independent short-circuit protection for each channel
9	Rated total output current	Source type or leakage type
10	Number of channels	8A

Table 3 Output Specifications of MOSFET

2.2.3 PROFINET Communication specification

The PROFINET communication specification parameters are shown in Table 4.

Number	Project	Specification
1	Agreement	PROFINET_RT (IEC 61158 Type3)
2	Transmission rate	10/100 Mbaud , Automatic transmission speed recognition
3	Bus interface	With dual RJ45 switches (industrial Ethernet compliant with IEEE 802.xx standard, featuring auto-negotiation and auto-crossing functions)
4	Communication address	The only globally unique MAC address
6	Transmission cable	CAT5e shielded cable
7	PROFINET features	Media Redundancy Protocol (MRP), shared devices, synchronous communication
8	Port protection	Transformer isolation, 1500V DC (IEC61000-4-2)

Table 4 PROFINET Communication Specifications

2.2.4 Power supply specifications

The module power supply is divided into three independent parts: the control part, the digital input part, and the MOSFET digital output part, which are isolated from each other. Therefore, three independent power supplies need to be provided for each part of the circuit or they can be directly connected in parallel.

- (1) The control voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 0.5A, and has polarity reverse protection; the electrical isolation withstand voltage between it and other I/O parts is 500V DC.
- (2) The digital input voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 16*10mA; the electrical isolation withstand voltage between it and other I/O parts is 500V DC.
- (3) The MOSFET digital output part uses 24V DC (-15% / +20%), with a maximum current consumption of 16*0.5A, and has channel-independent overcurrent protection; the electrical isolation withstand voltage between it and other I/O parts is 500V DC.



3. Structure description

3.1 Shell

The module adopts the standard shell design of the JP series remote I/O module. The dimensions of 16 points are: 111 * 50 * 40 (W/H/D, mm); for 32 points, they are: (180 * 50 * 40 (W/H/D, mm), the height of the lower guide rail clip is h = 5.5 mm, and it supports the IP20 protection level.

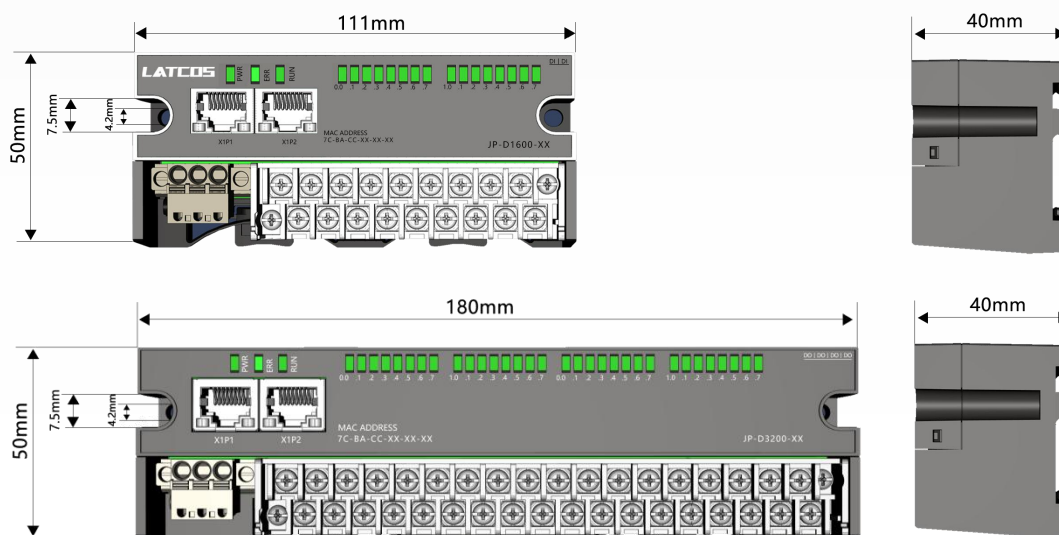


Figure 1 Module Dimension Diagram

3.2 Installation method

The design of the module adopts natural convection cooling method. At least 25 mm of space must be left above and below the device to facilitate normal heat dissipation. The distance between the front panel and the back panel should also be maintained at least 75 mm.

The module can be easily installed on a standard DIN rail or the back panel of a control cabinet. The rail specification is TS35/7.5, as shown in Figure 2.

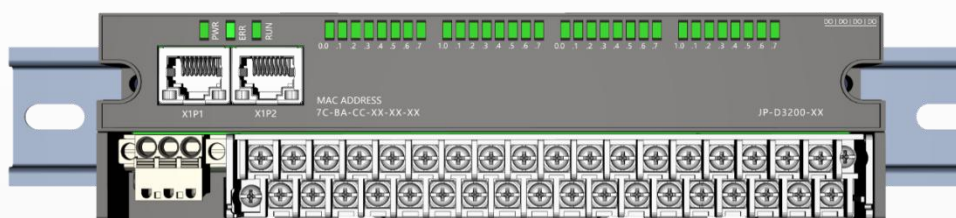


Figure 2 Installation Diagram of DIN Rails



4.Hardware description

4.1 JP-PN Structure diagram 16 points

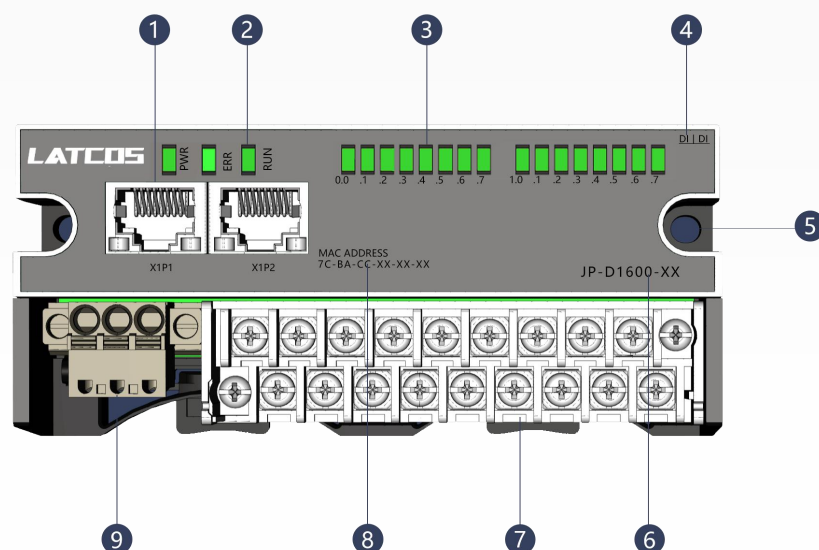


Figure 3 Module Wiring Diagram

Number	Interface Name	Function Definition
①	2 RJ45 ports Indicator light	Ethernet interface, connecting to PLC or PC end
②	Indicator light	Power supply, communication status indicator light
③	Indicator light	IO status indicator light
④	Module type	Grouped every 8 points, indicating input/output type
⑤	Installation hole	-
⑥	Module model	-
⑦	IO terminal block	Receive input and output signals, provide IO power supply
⑧	MAC code	Unique MAC code
⑨	Communication power connection terminal	Communication power supply

4.2 JP-PN Structure diagram 32 points

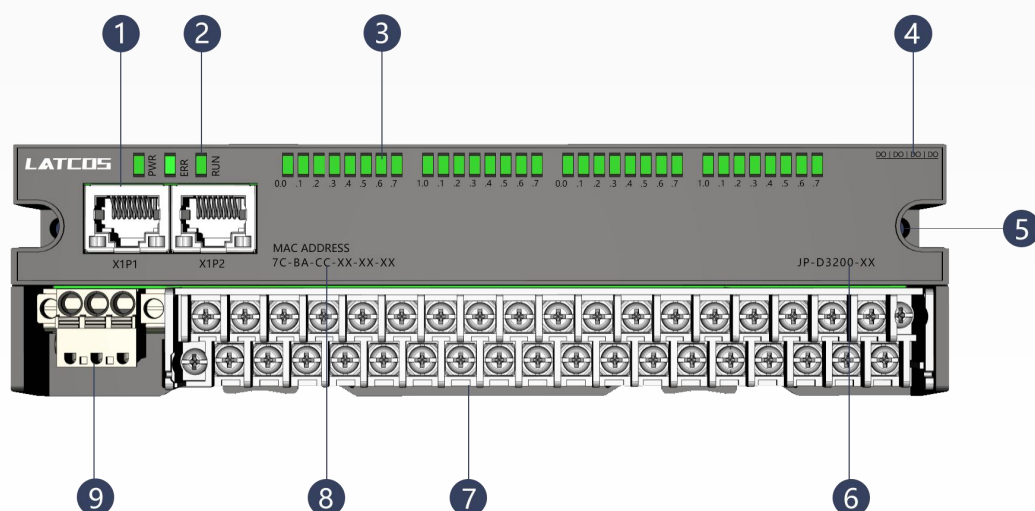


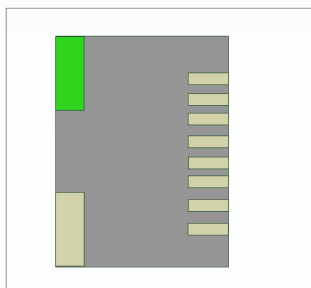
Figure Module Wiring Diagram

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⑤	Installation hole	-
⑥	Module model	-
⑦	IO terminal block	Receive input and output signals, provide IO power supply
⑧	MAC code	Unique MAC code
⑨	Communication power connection terminal	Communication power supply

4.3 Communication interface

The module uses a physical interface with dual RJ45 sockets for communication. The module itself has the function of a switch. They are respectively labeled as X1P1 and X1P2. Each port has an independent MAC address that is adjacent to the identifier on the module.

Table 5 PROFINET Communication Interface



Pin	Signal	Description
1	TD+	Data transmission positive terminal
2	TD-	Data transmission negative terminal
3	RD+	Data reception positive terminal
4	NC	Unused
5	NC	Unused
6	RX-	Data reception negative terminal
7	NC	Unused
8	NC	Unused

4.4 LED Instruction

The LED indicators of the module are divided into three parts: system status indicator, I/O status indicator, and RJ45 link indicator.

4.4.1 System status indicates the working condition of the system as shown in the table.

ERR(red)	RUN(green)	PWR(green)	Explanation
○	○	○	Power supply abnormality
●	○	●	Communication interface failure
○	●	●	The module has successfully entered the operating (operate) state and successfully established a cyclic data exchange with the main station.

Table 8 System Status Indicators ● Indicates that the green light remains constantly on

● Indicates that the red light remains constantly on ○ Indicates that it is not lit

4.4.2 I/O Status Indication

The digital input/output ports use green LEDs to indicate the status of the corresponding channels. When the light is on, it indicates that the logic state of the input/output port is "1", and when the light is off, it indicates that the logic state of the input/output port is "0".

4.4.3 RJ45 indicator light

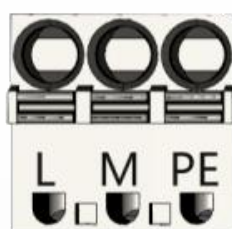
Under normal circumstances, the RJ45 port indicator lights should be the green light constantly on and the yellow light flashing. If this is not the case, it indicates that a fault has occurred. If the green light is not on, it means there is a connection fault with the RJ45 port that is connected to a Hub or switch; if the yellow light is not on, it might be a fault with the module itself.

As shown in Table 7: RJ45 Indicator Light Explanation

LINK1/LINK2	ACT1/ACT2	Explanation
○	Not related	The RJ45 port is not connected to a network cable or the connection is poor.
●	Not related	The RJ45 port has correctly identified the Ethernet network.
Not related	○	There is no data exchange at the RJ45 port.
Not related	●	There is data exchange at the RJ45 port.

Table 7 RJ45 Indicator Light Explanation

4.5 Communication power supply



24V	24V, positive terminal of the DC power supply
0V	0V, negative terminal of the DC power supply
PE	Connect to the ground

Table 8 Power Connection Terminals

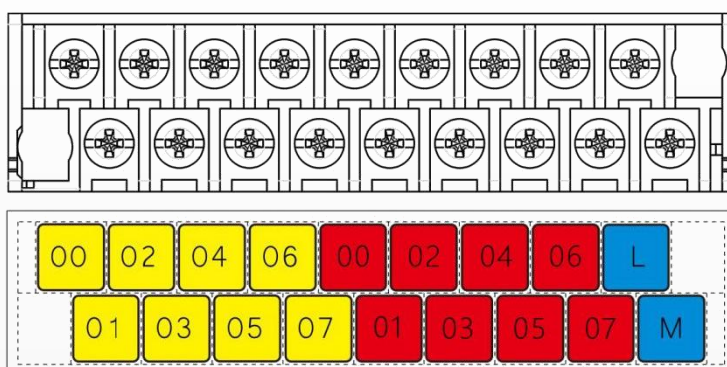
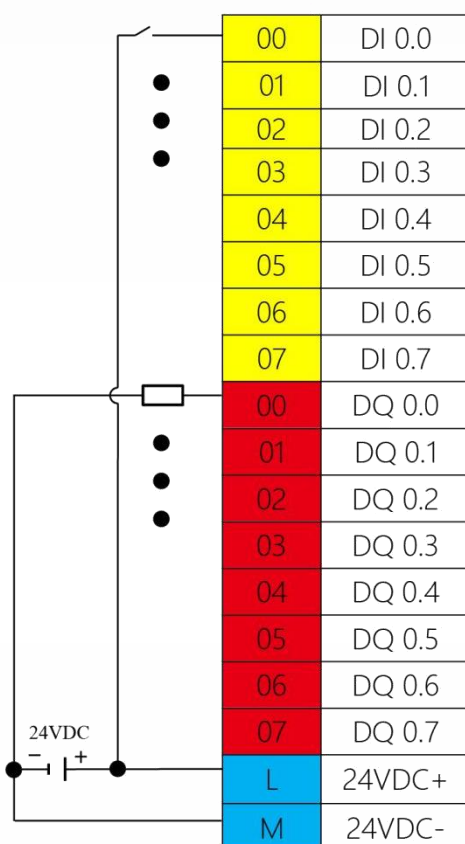
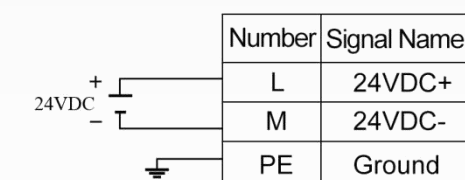
The control voltage uses 24V DC (-15% / +20%), with a maximum current consumption of 0.5A, and has polarity reverse protection; the electrical isolation withstand voltage between it and other I/O components is 500V DC.

4.6 Module terminal wiring diagram

JP-D0808P-PN

8-point digital input (PNP)

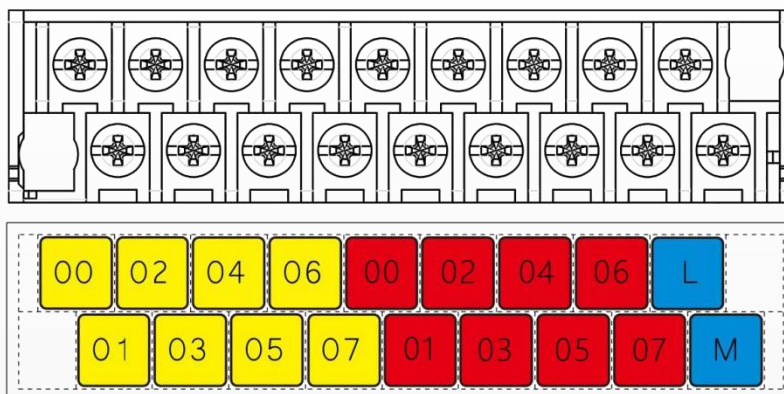
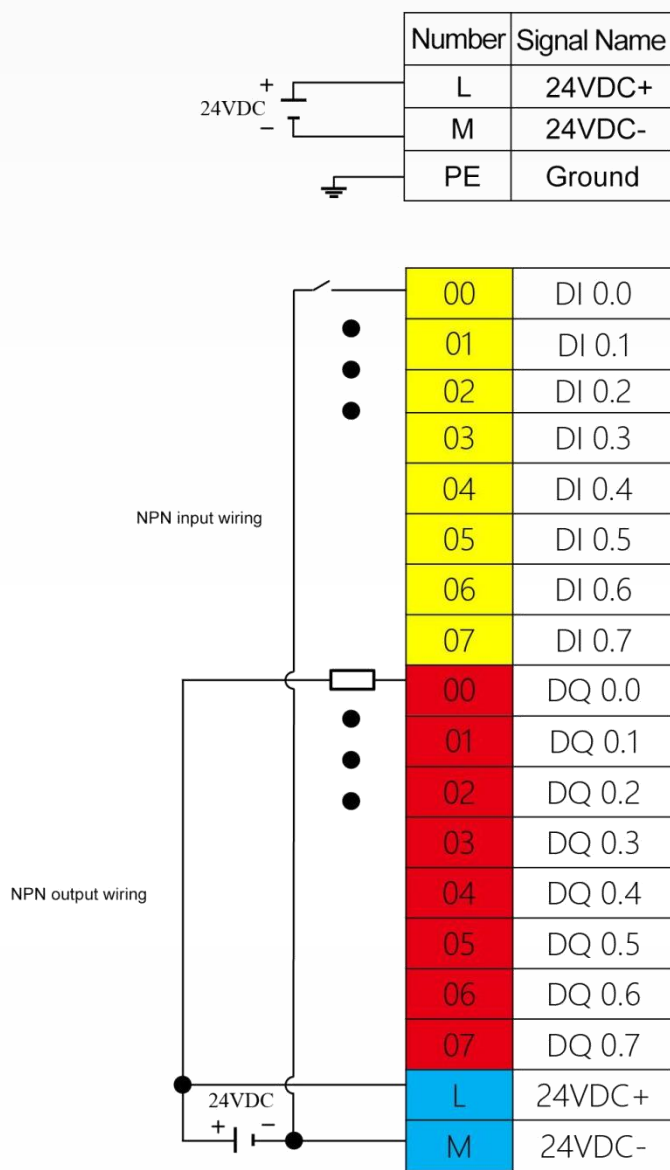
8-point digital output (PNP)



JP-D0808N-PN

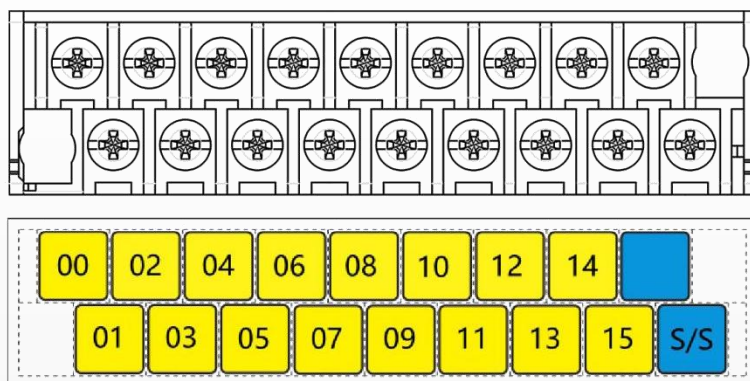
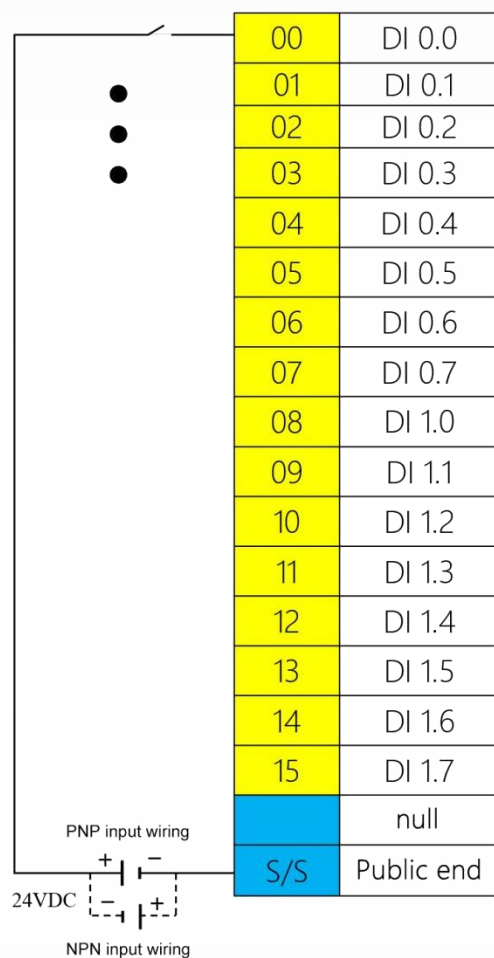
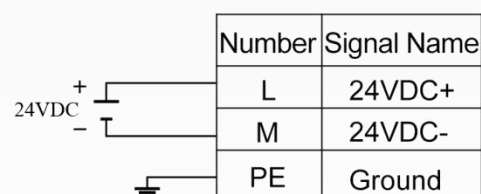
8-point digital input (NPN)

8-point digital output (NPN)



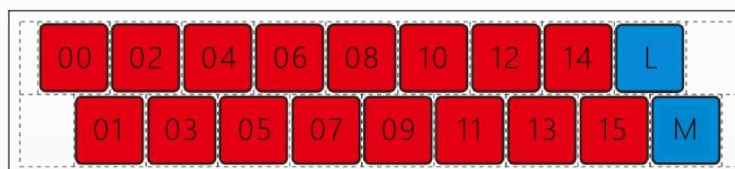
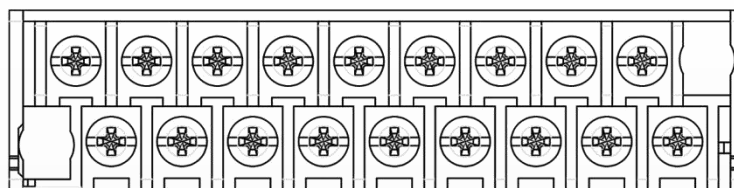
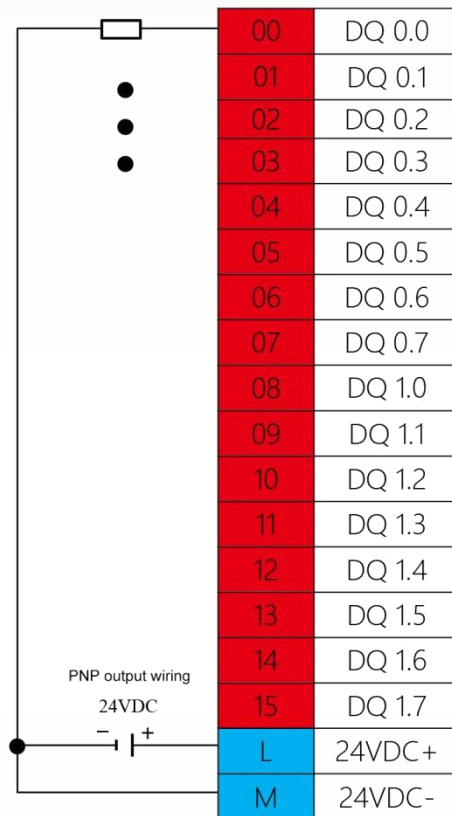
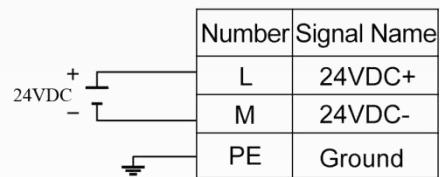
JP-D1600-PN

16-bit digital input PNP/NPN



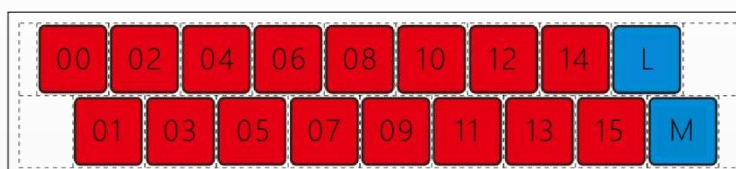
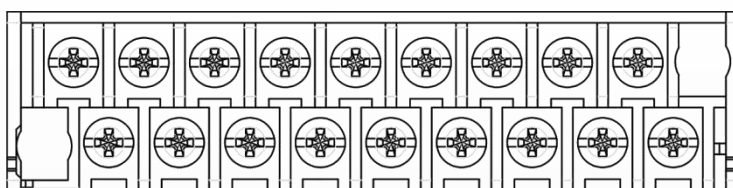
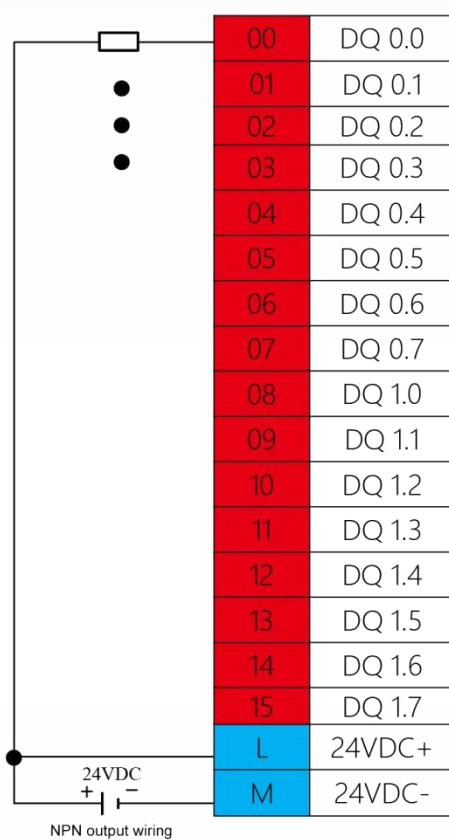
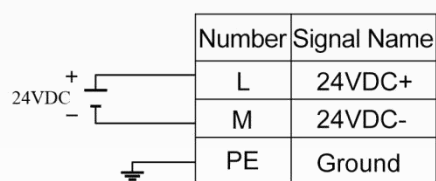
JP-DO016P-PN

16-bit digital output PNP



JP-DO016N-PN

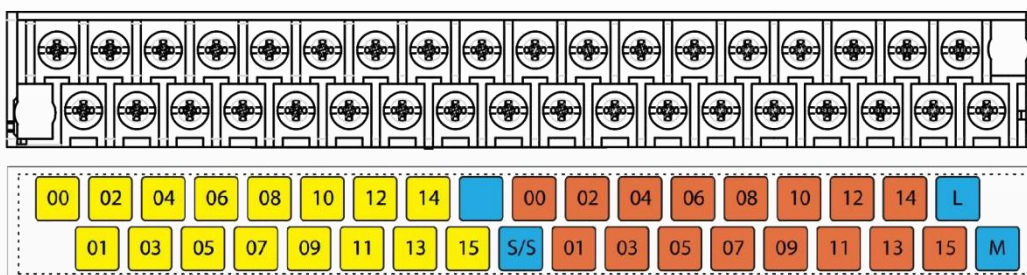
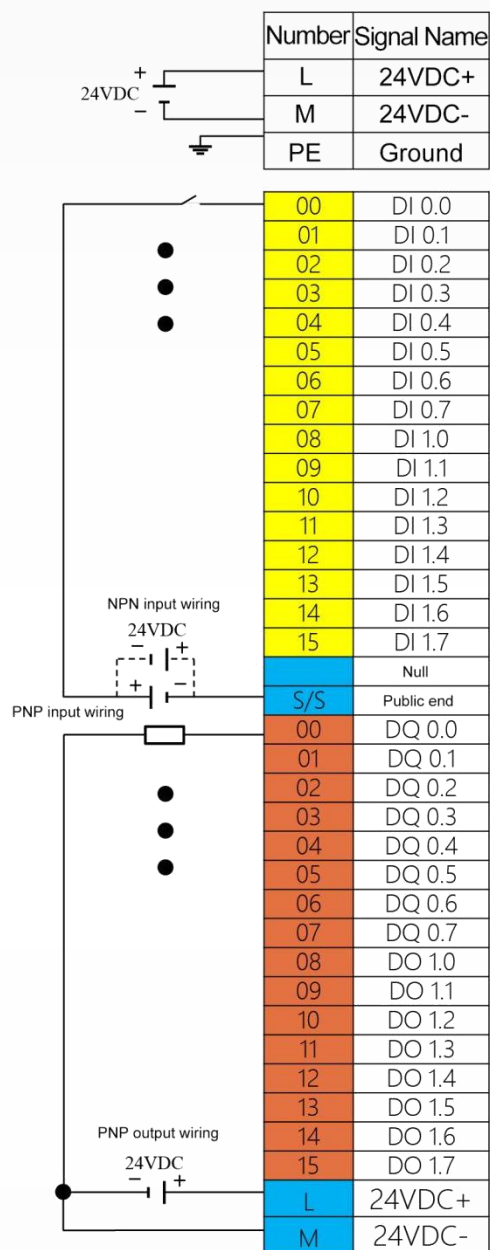
16-bit digital output NPN



JP-D1616P-PN

16-bit digital input PNP/NPN

16-bit digital output PNP

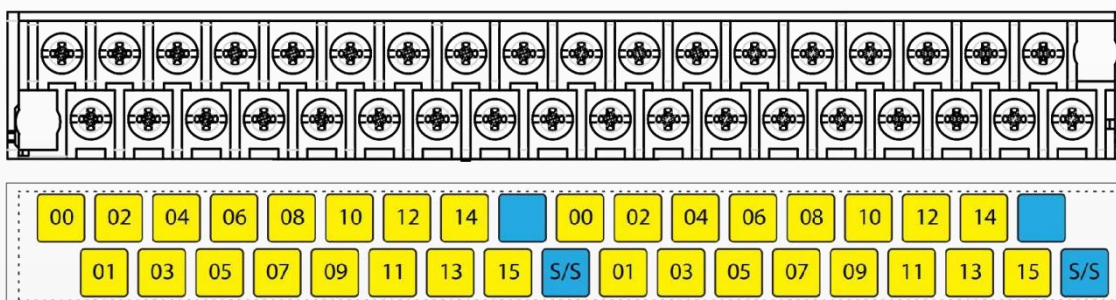
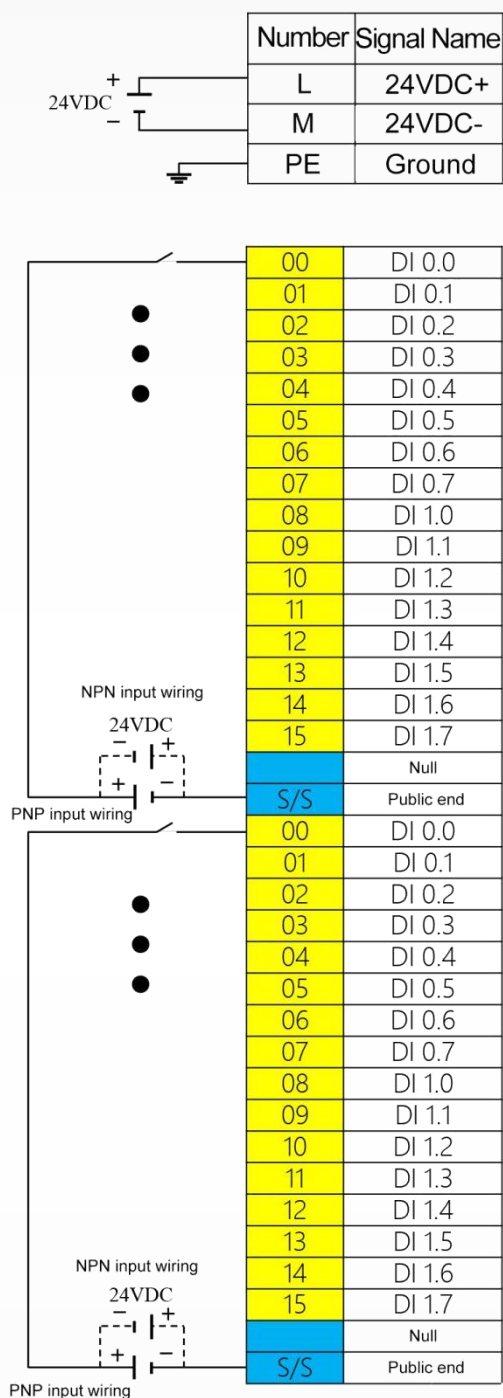


16-bit digital input PNP/NPN
16-bit digital output NPN



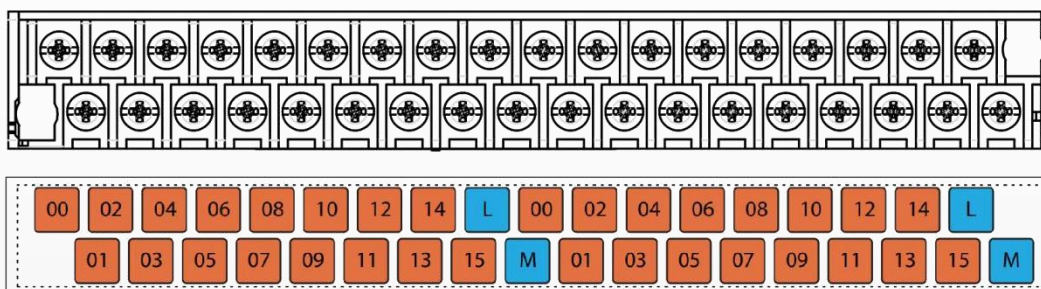
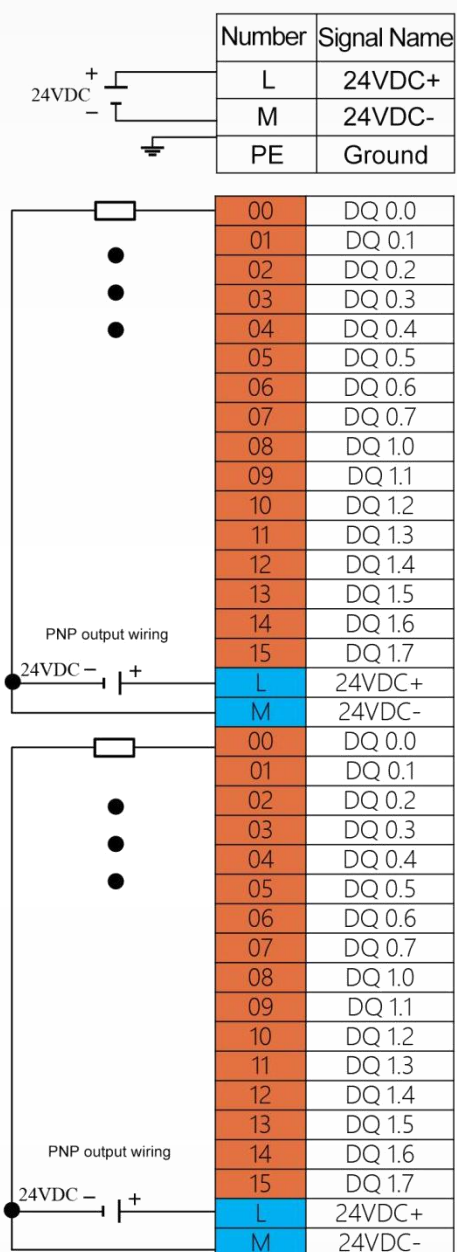
JP-D3200-PN

32-point digital input, PNP/NPN type



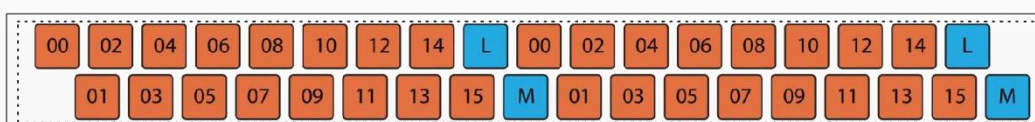
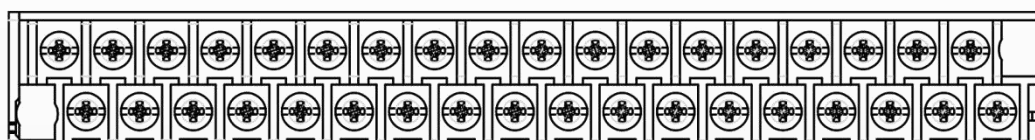
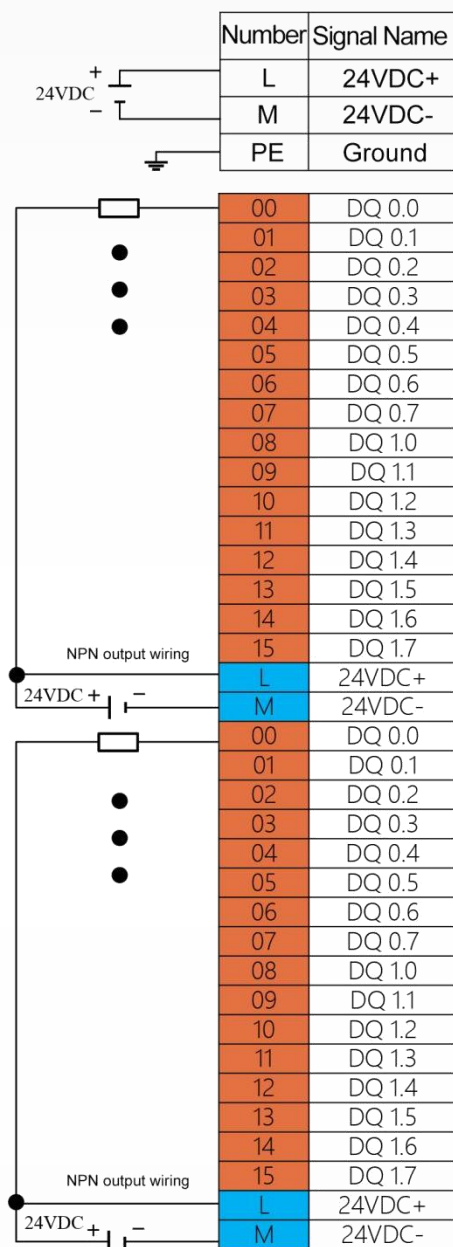
JP-D0032P-PN

32-point digital output PNP



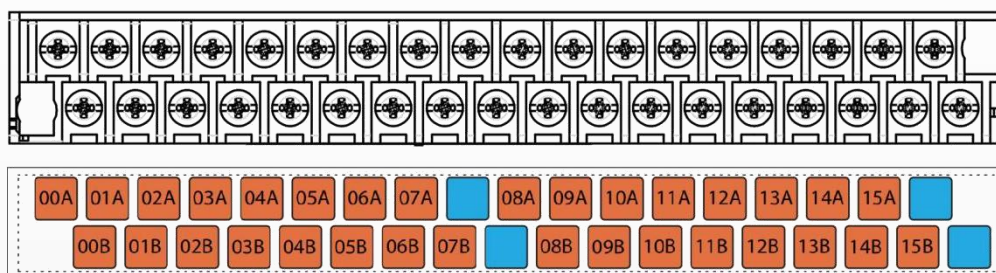
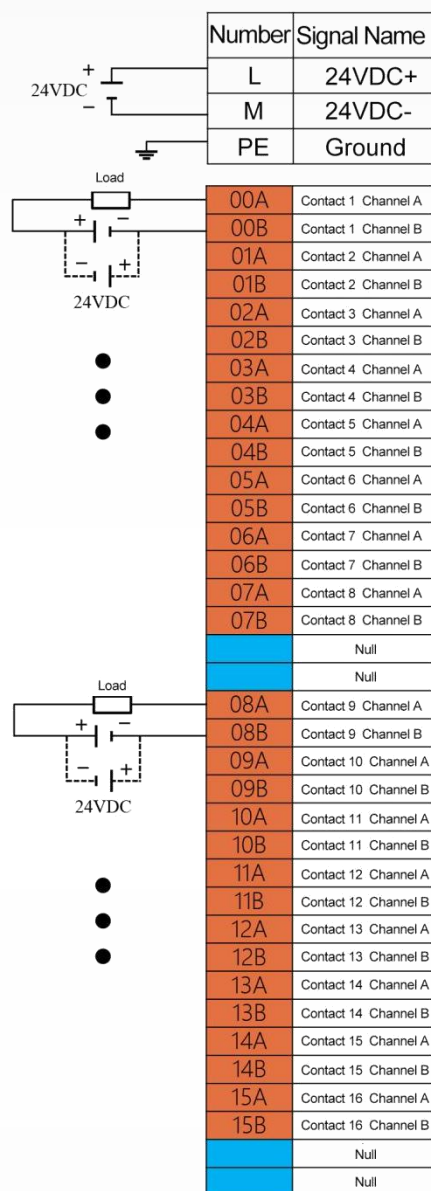
JP-D0032N-PN

32-point digital output NPN



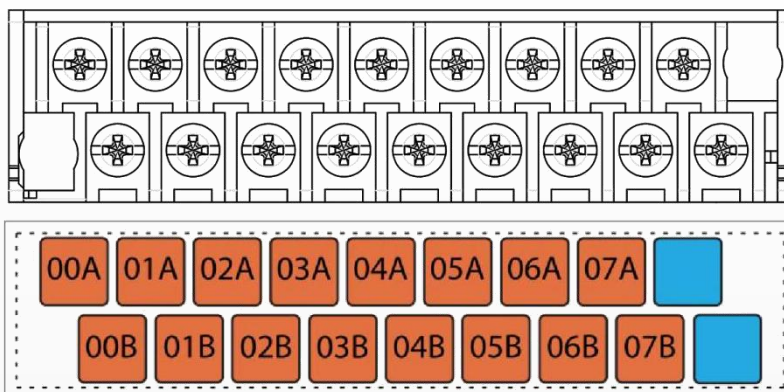
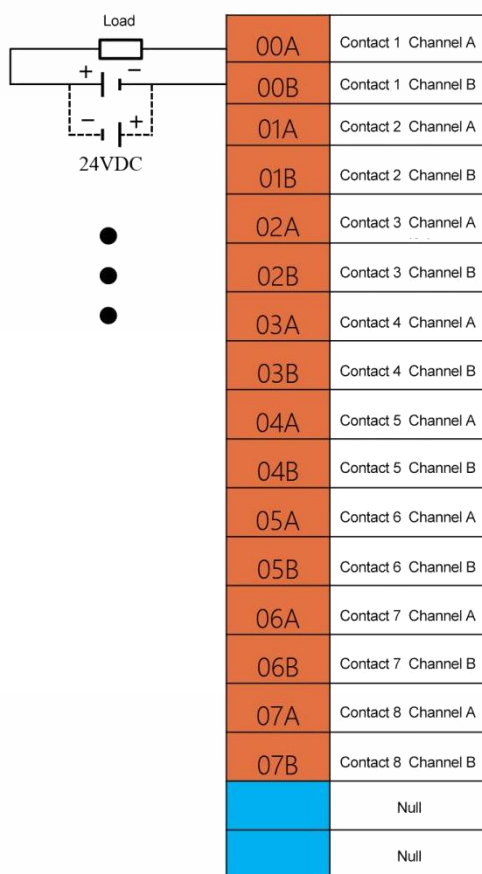
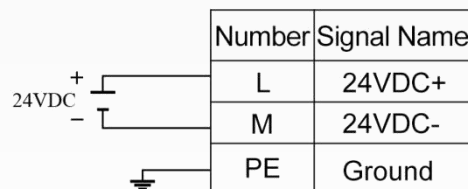
JP-D0016R-PN

Digital 16-point relay output PNP/NPN



JP-D0008R-PN

Digital 8-point relay output PNP/NPN





5.Ethernet protocol

5.1 What is PROFINET IO?

Definition:

PROFINET IO is an open transmission system that possesses the real-time functions defined by the PROFINET standard. This standard defines communication, automation, and engineering models independent of manufacturers.

Industrial-grade wiring accessories that can be used with PROFINET components are available.

- PROFINET does not adopt the hierarchical PROFIBUS master/slave architecture, but rather a provider/consumer architecture. During the planning process, the IO controller can control the IO device modules it can control.

- The number of modules depends on the application method of PROFINET IO. These parameters cannot be exceeded during configuration.

- The transmission rate is 100 Mbps.

- The user view during the configuration process is basically the same as that of PROFIBUS DP.

5.2 Network topology

PROFINET IO has three typical network layouts, as shown in Figures 5-1, 5-2, and 5-3.

5.2.1 Star network

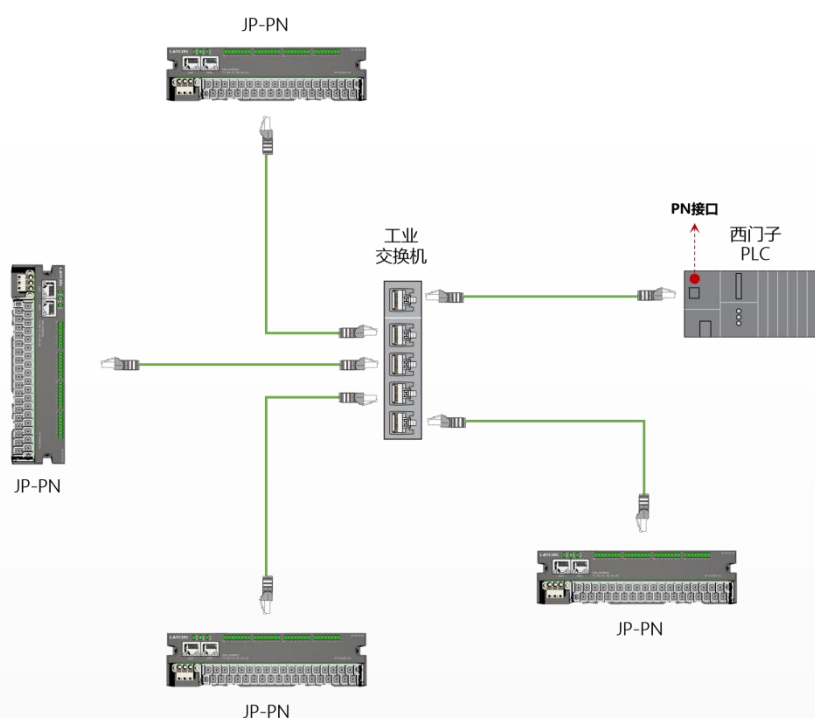


Figure 5-1 PROFINET Star Network Topology Structure

5.2.2 Daisy-chain network

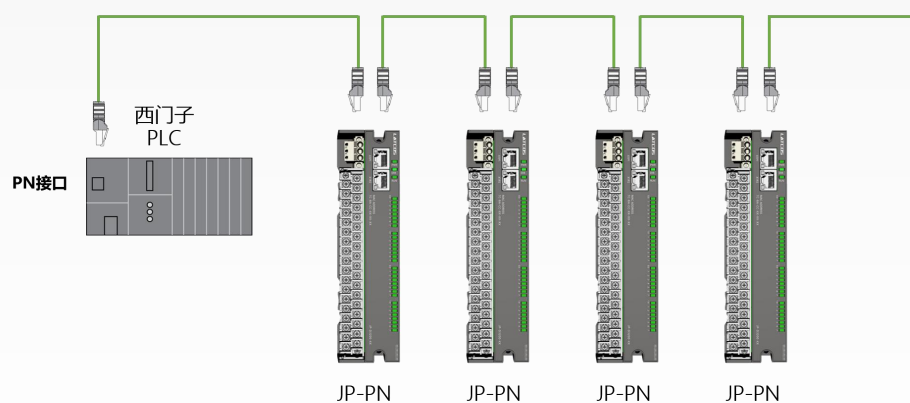


Figure 5-2 PROFINET Daisy Chain Network Topology Structure

5.2.3 Tree-shaped network

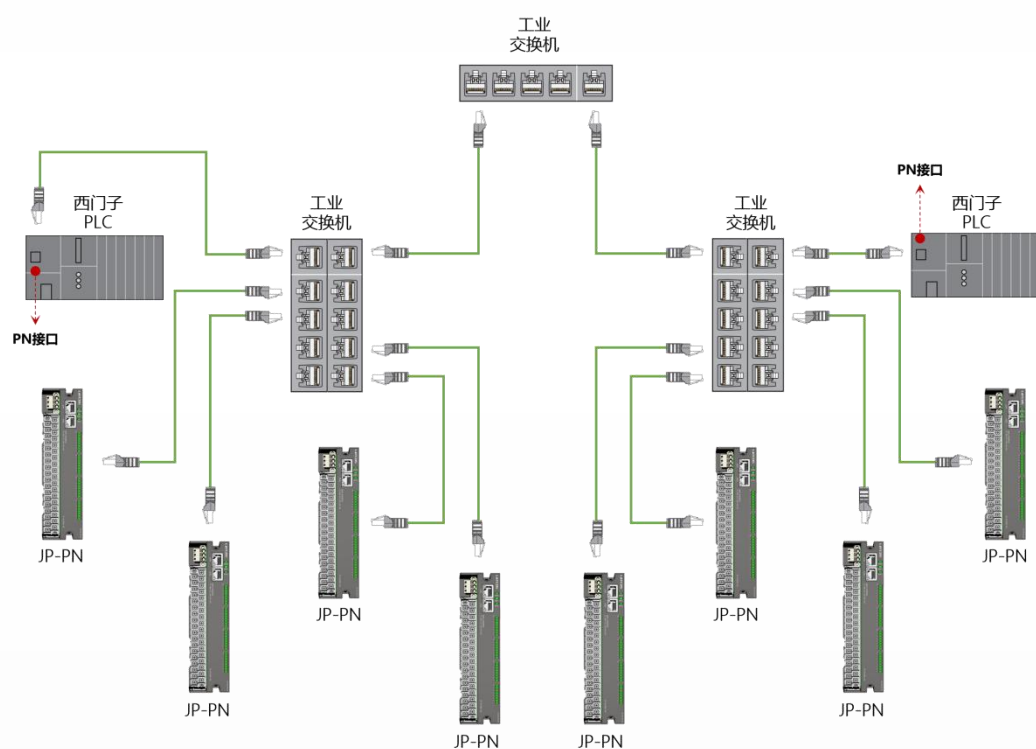


Figure 5-3 PROFINET Tree Network Topology Structure

5.3 JP-PN Address mapping

The JP-PN DI/DQ data is mapped to the main station's memory space through the configuration profile, as shown in the figure.

- 16 digital input channels are mapped to 2-byte In addresses;
- 16 digital output channels are mapped to 2-byte Out addresses;

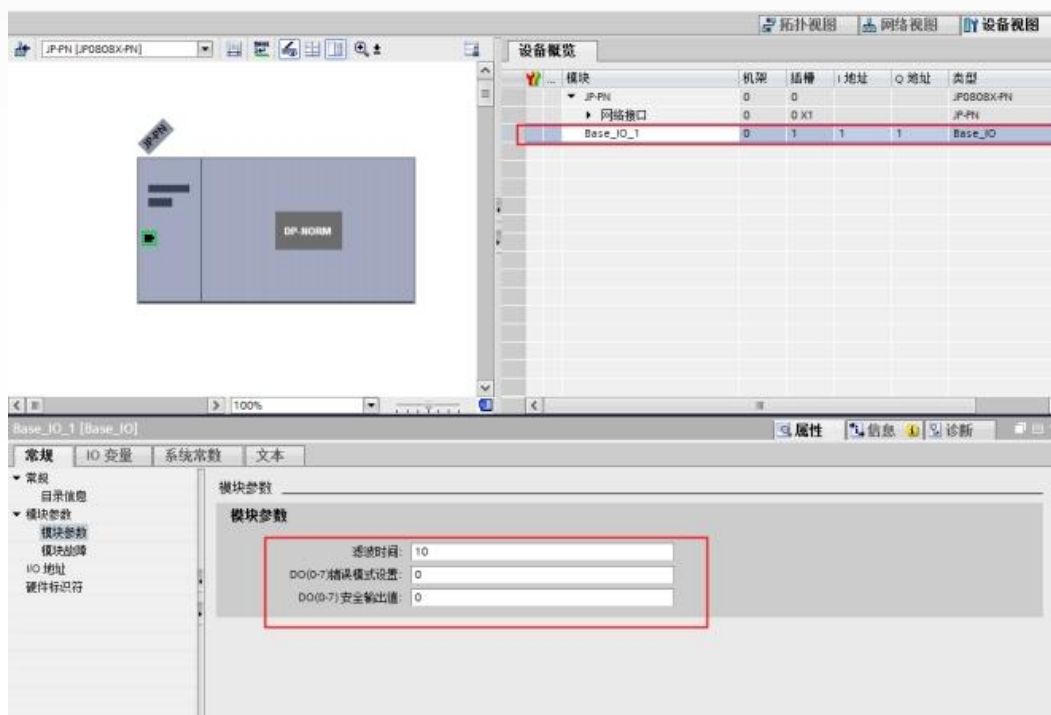


Figure 5-4 Address Mapping of Module (JP-PN)

5.4 Module Parameters

Each module has specific parameters, which need to be flexibly configured according to the actual situation on the hardware configuration interface. These parameters will be simultaneously downloaded to the controller along with the hardware configuration. In the initial running state, the controller will send these data to the module. If the actual configuration of the module at the site is inconsistent with the hardware configuration in the program, the transmitted parameters will not be consistent with the actual situation, resulting in unsuccessful configuration of the module parameters. The controller will report an error during operation.

JP-D0808X-PN Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input filtering time (Filter)							
Data Explanation								
Parameter Name		Organization	Format	Input range	Explanation			
Chinese	English							
Input filtering time	Filter	ms	Decimal system	0-255 (Default: 5)				
Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
Data Explanation								
Parameter Name		Organization	Format	Input range	Explanation			
Chinese	English							
Fault mode enable Fault value - Safe state value	DO Error_Mode bits	-	Decimal system	0-255 (Default: 0)	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.			
Fault mode enable	DO Error_Value bits	-	Decimal system	0-255 (Default: 0)	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.			

JP-D0016X-PN Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
Data Explanation								
Parameter Name		Organization	Format	Input range	Explanation			
Chinese	English							
Fault mode enable Fault value - Safe state value	DO Error_Mode bits	-	Decimal system	0-255	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.			
				(Default : 0)				
Fault mode enable	DO Error_Value bits	-	Decimal system	0-255	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, then when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.			
				(Default : 0)				

JP-D1600-PN Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input filtering time (Filter)							
Data Explanation								
Parameter Name		Organizati on	Format	Input ran ge	Explanation			
Chinese	English							
Input filtering time	Filter	ms	Decimal system	0-255				

JP-D3200-PN Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input filtering time (Filter)							
Data Explanation								
Parameter Name		Organizati on	Format	Input ran ge	Explanation			
Chinese	English							
Input filtering time	Filter	ms	Decimal system	0-255				
				(Default: 5)				

JP-D0032X-PN Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 0-7)	7	6	5	4	3	2	1	0
BYTE 2	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode	DO Error_Mode
(DO Error_Mode bits 8-15)	For 15	For 14	For 13	For 12	For 11	For 10	For 9	For 8
BYTE 3	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For	DO Error Value For
(DO Error_Value bits 8-15)	15	14	13	12	11	10	9	8
.	16-31 Refer to the above configuration							

Data Explanation

Parameter Name		Organiza tion	Format	Input ran ge	Explanation
Chinese	English				
Fault mode enable Fault value - Safe state value	DO Error_Mod e bits	-	Decimal system	0-255 (Default: 0)	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.
Fault mode enable	DO Error_Valu e bits	-	Decimal system	0-255 (Default: 0)	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.

JP-D1616X-PN Parameter configuration definition

Input data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	Input filtering time (Filter)							
Data Explanation								
Parameter Name		Organizati on	Format	Input range	Explanation			
Chinese	English							
Input filtering time	Filter	ms	Decimal syst em	0-255				
				(Default: 5)				
Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_Mod e	DO Error_Mod e	DO Error_Mod e	DO Error_Mode	DO Error_ Mode	DO Error_Mod e	DO Error_Mod e	DO Error_Mod e
(DO Error_ Mode bits 0- 7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
BYTE 1	DO Error Valu e For	DO Error Valu e For	DO Error Valu e For	DO Error Value F or	DO Error Value For	DO Error Valu e For	DO Error Valu e For	DO Error Valu e For
(DO Error_ Value bits 0- 7)	7	6	5	4	3	2	1	0
BYTE 2	DO Error_Mod e	DO Error_Mod e	DO Error_Mod e	DO Error_Mode	DO Error_ Mode	DO Error_Mod e	DO Error_Mod e	DO Error_Mod e
(DO Error_ Mode bits 8- 15)	For 15	For 14	For 13	For 12	For11	For 10	For 9	For 8
BYTE 3	DO Error Valu e For	DO Error Valu e For	DO Error Valu e For	DO Error Value F or	DO Error Value For	DO Error Valu e For	DO Error Valu e For	DO Error Valu e For
(DO Error_V alue bits8-15)	15	14	13	12	11	10	9	8
Data Explanation								
Parameter Name		Organizati on	Format	Input range	Explanation			
Chinese	English							
Fault mode enable Fault value - Safe state value	DO Error_ Mode bits	-	Decimal sys tem	0-255	The fault safety status value of the DQ0.x port i s enabled. The binary bit of this parameter corr esponds to the DQ0.x port (Bit 0 corresponds t o DQ-0.0, and so on). When the module enter s the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresp onding bit of "Error Value[7..0]" is output to the respective DQ0.x port.			
				(Default: 0)				
Fault mode enable	DO Error_V alue bits	-	Decimal sys tem	0-255	If the binary bit corresponding to the "Error Mo de[7..0]" parameter is set to enable, when the s ystem enters the fault-safe state, the value of t his parameter will be output to the DQ port.			
				(Default: 0)				

JP-D0008X-PN Parameter configuration definition

Output data								
BIT No	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
BYTE 0	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode	DO Error_ Mode
(DO Error_Mode bits 0-7)	For 7	For 6	For 5	For 4	For 3	For 2	For 1	For 0
数据说明：								
Parameter Name		Organiza tion	Format	Input ra nge	Explanation			
Chinese	English							
Fault mode enable Fault value - Safe state value	DO Error_ Mode bits	-	Decimal system	0-255	The fault safety status value of the DQ0.x port is enabled. The binary bit of this parameter corresponds to the DQ0.x port (Bit 0 corresponds to DQ-0.0, and so on). When the module enters the fault safety state, if the corresponding bit of "Error Mode" is "1", the value of the corresponding bit of "Error Value[7..0]" is output to the respective DQ0.x port.			
				(Default : 0)				
Fault mode enable	DO Error_ Value bits	-	Decimal system	0-255	If the binary bit corresponding to the "Error Mode[7..0]" parameter is set to enable, when the system enters the fault-safe state, the value of this parameter will be output to the DQ port.			
				(Default : 0)				



6.Configuration Parameter Description

The following is an explanation of the configuration parameters for the modules based on the TIA Portal V14 software of Siemens.

6.1 Equipment database file (GSDML)

PROFINET uses device database files (GSDML) to describe the communication characteristics of the devices. GSDML (General Station Description Markup Language) is a description language based on XML. It can be written using standard XML editors. Currently, the latest version of the GSDML specification released by the PI organization is V2.31.

6.1.1 File name

The accompanying GSD file for GSDML-V2.35-LATCOS-JP-PN-20220608.xml.

- "GSDML-V2.35" indicates the version number of GSDML, with V2.35 being the latest version.
- "LATCOS" represents the supplier's name.
- "JP-PN" indicates the product number for which this version is applicable. This version can be used for the JP-PN remote I/O module.
- "20220608" represents the modification date.

6.1.2 Installation of the GSD file

The following is based on the installation instructions for Siemens' TIA Portal V14 software.

The following is an explanation of the configuration parameters for the modules based on the TIA Portal V14 software of Siemens.

(1) Open TIA Portal V14 and enter the project window

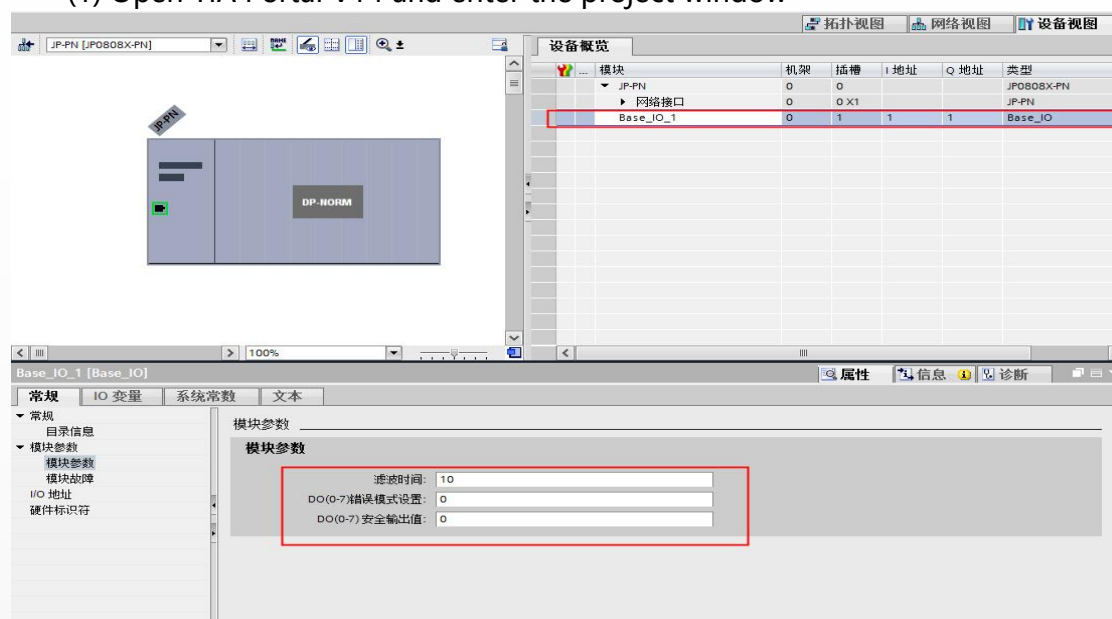


Figure 6-1 TIA Portal V14 Engineering Window

(2) Click on the "Options" toolbar menu, then find the "Manage General Site Device Profile (GSF) (D)" menu and click to enter.

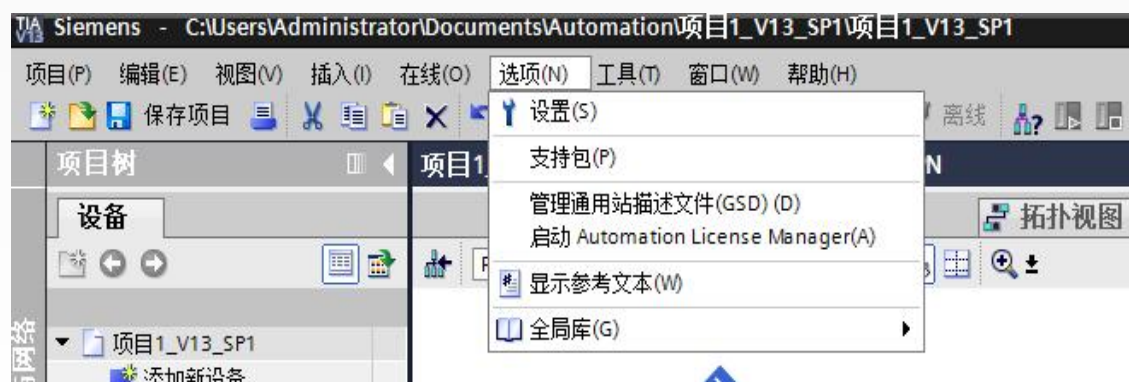


Figure 6-2 TIA Portal V13 Tool Menu Window

(3) Enter the installation interface of the GSD file, click the "Browse" button to access the directory where the GSD files are located. There should be two files in the directory: one is the GSD file to be installed, and the other is the product icon. Select the corresponding GSD file for installation.

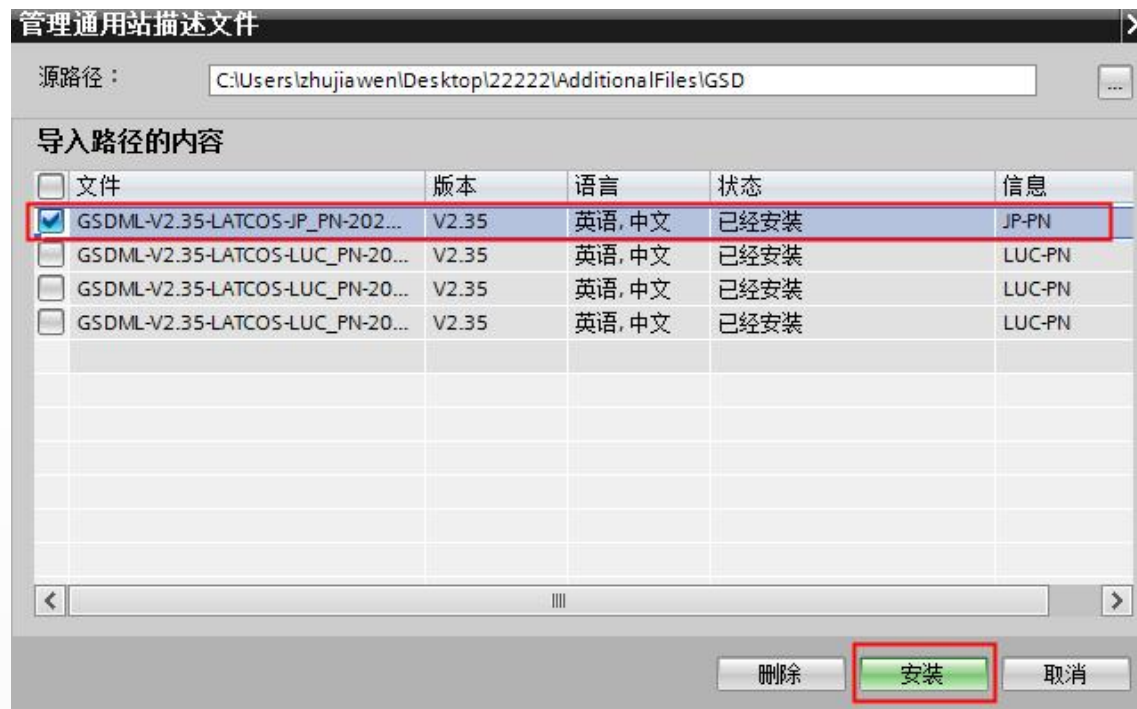


Figure 6-3 GSD Installation Window

(4) The following interface will appear. Once it does, click "Close" and wait for the software to automatically update the hardware directory.



Figure 6-4 GSD Installation Completion Window

6.1.3 The deletion of GSD

The software of Siemens TIA Portal V13 does not provide a dedicated interface or tools for deleting GSD. This function needs to be achieved by using a third-party tool (Everything tool).

- (1) Download the Everything tool (an extremely useful file search tool)
- (2) Close TIA Portal V13
- (3) Open Everything. For the first time, you need to wait for the scanning software to scan the entire disk. After the scan is completed, enter the file name to be deleted in the search bar, such as "GSDML-V2.31-LATCOS-JP-PN-20210804.xml"

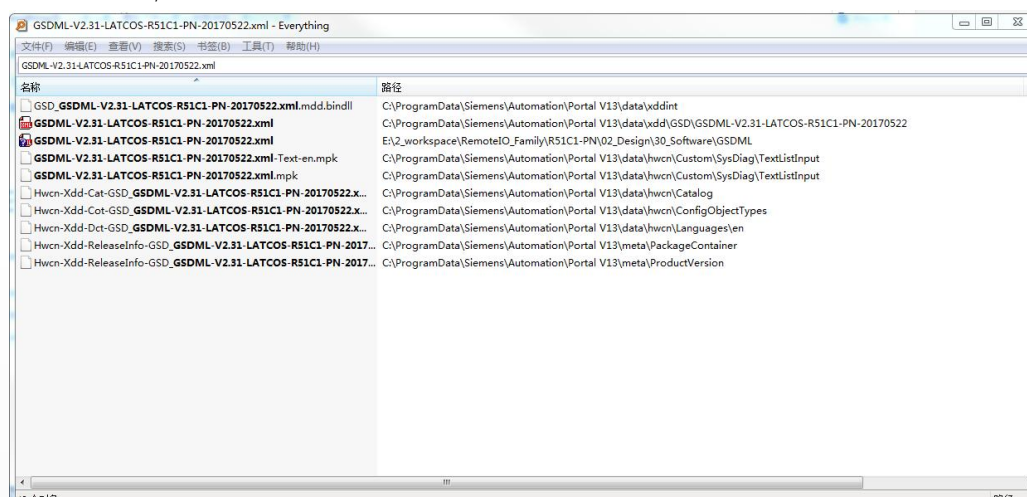


Figure 6-5 Everything window

(4) Click on "Path" to sort by installation path. Select the files and folders related to the Siemens path, then right-click and select "Delete". Be careful not to delete the saved backup GSD files as well.

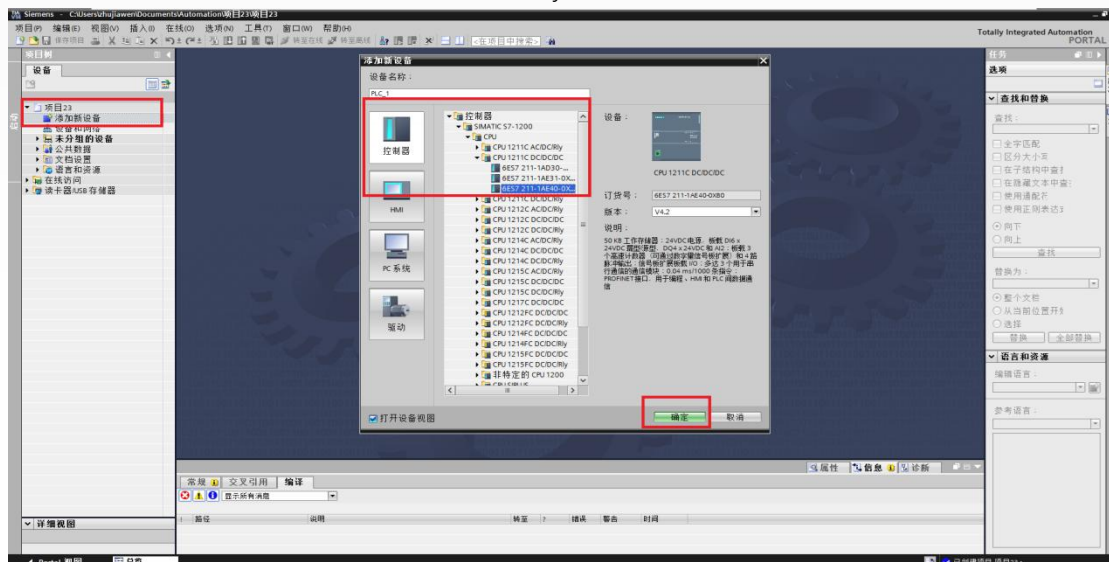
(The above method for removing GSD is for reference only.)



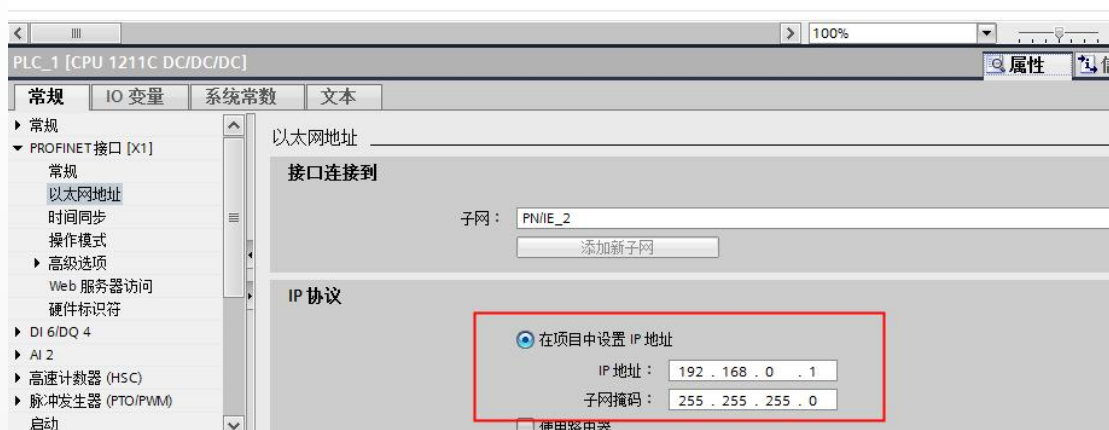
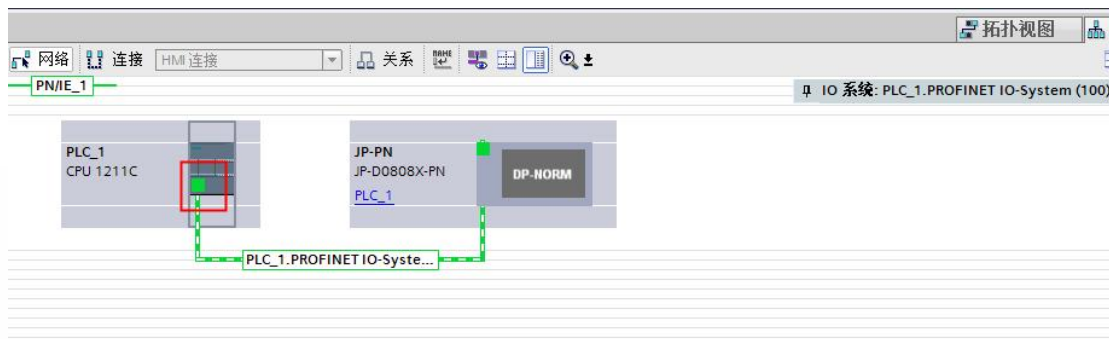
7.Case of I/O Addition Method

7.1 Example of Adding Remote I/O for Siemens Beckhoff V14

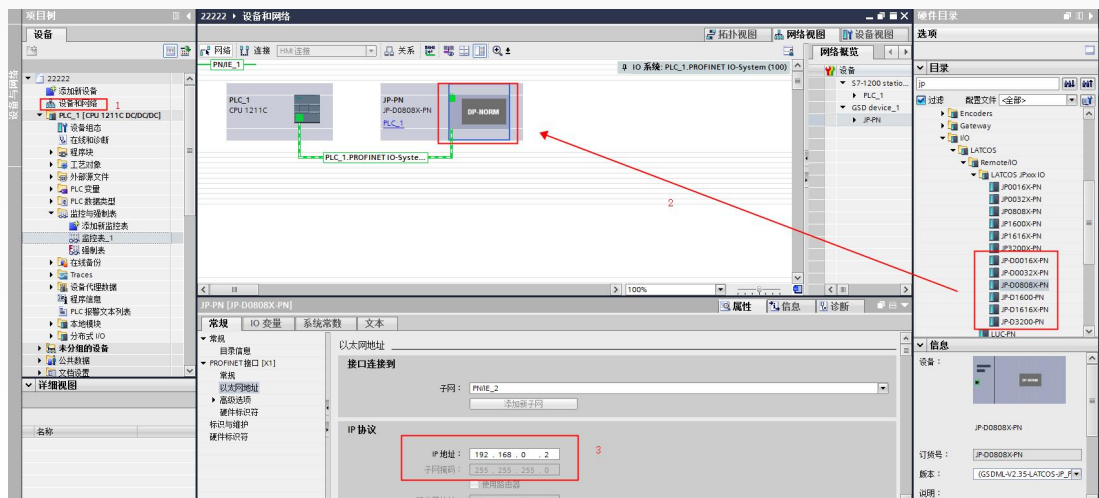
① Take S7-1200 as an example. First, click on "Add New Device", then add a 1211C CPU in SIMATIC S7-1200, and finally click "OK".



② Click on "Add New Subnet". The IP address must be the same as the CP U address. Here, the 1200 address is 192.168.0.1.



③ In the network view, click on other field devices. Under PROFINET IO, select IO/LATCOS/Remote/IO/JP-PN. Then drag the JP-D0808N-PN to the network view.

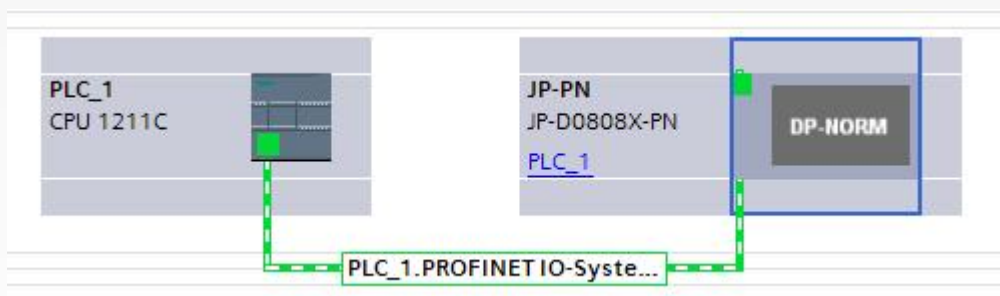


Take JP-D0808N-PN as an example, then right-click on "Unallocated" and select "Assign to New I/O Controller".

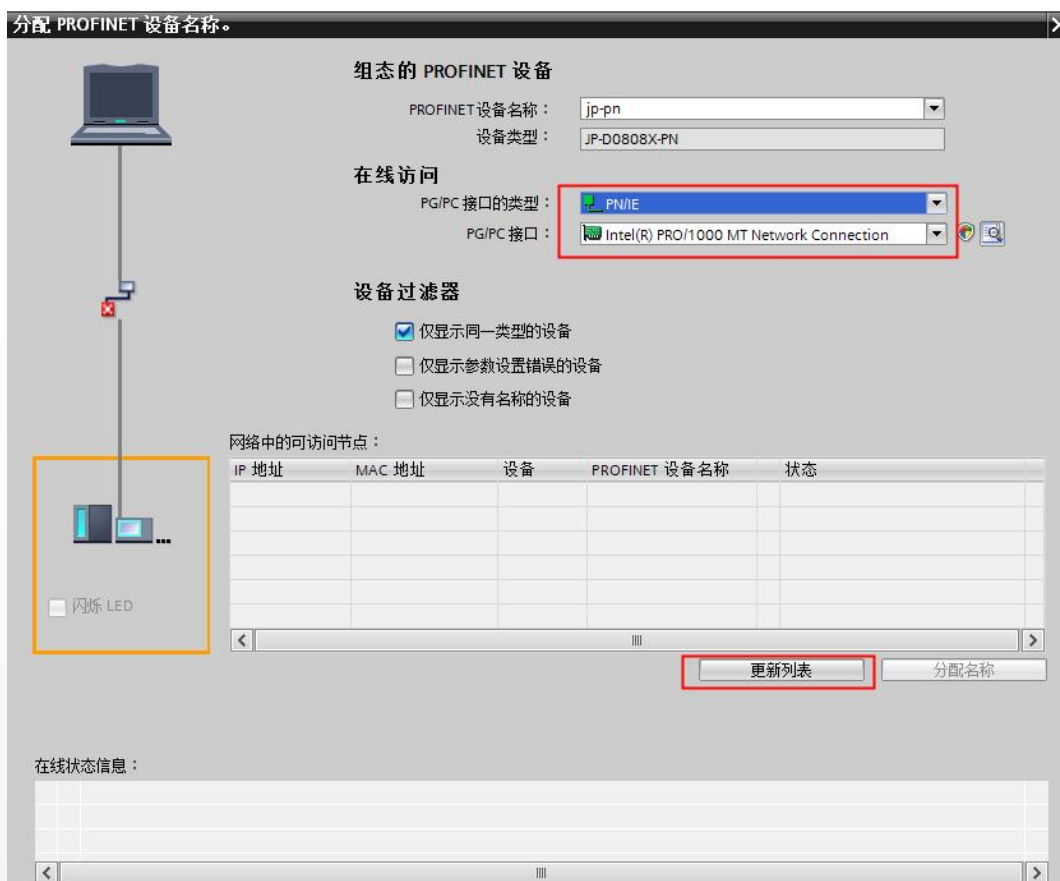
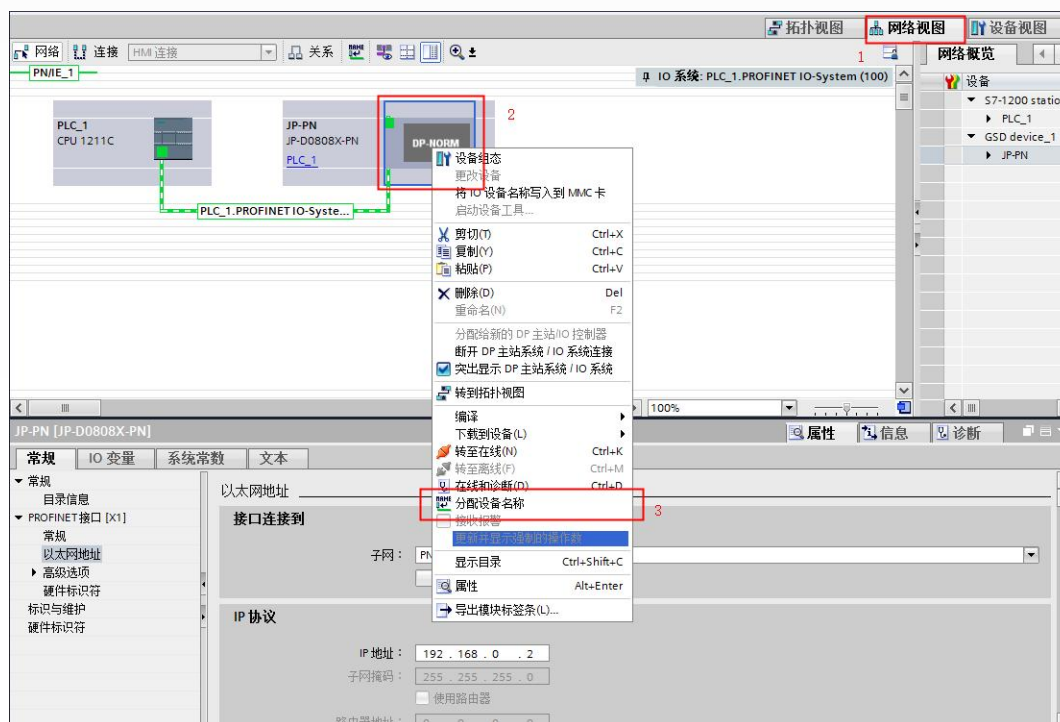
JP-PN Module Point Configuration		
Model	Input/Output Module	Quantity
JP-D1600-PN	Input 2 byte	1 个
JP-D0016X-PN	Output 2 byte	1 个
JP-D3200-PN	Input 2 byte	2 个
JP-D0032X-PN	Output 2 byte	2 个
JP-D1616X-PN	Input 2 byte	1 个
	Output 2 byte	1 个

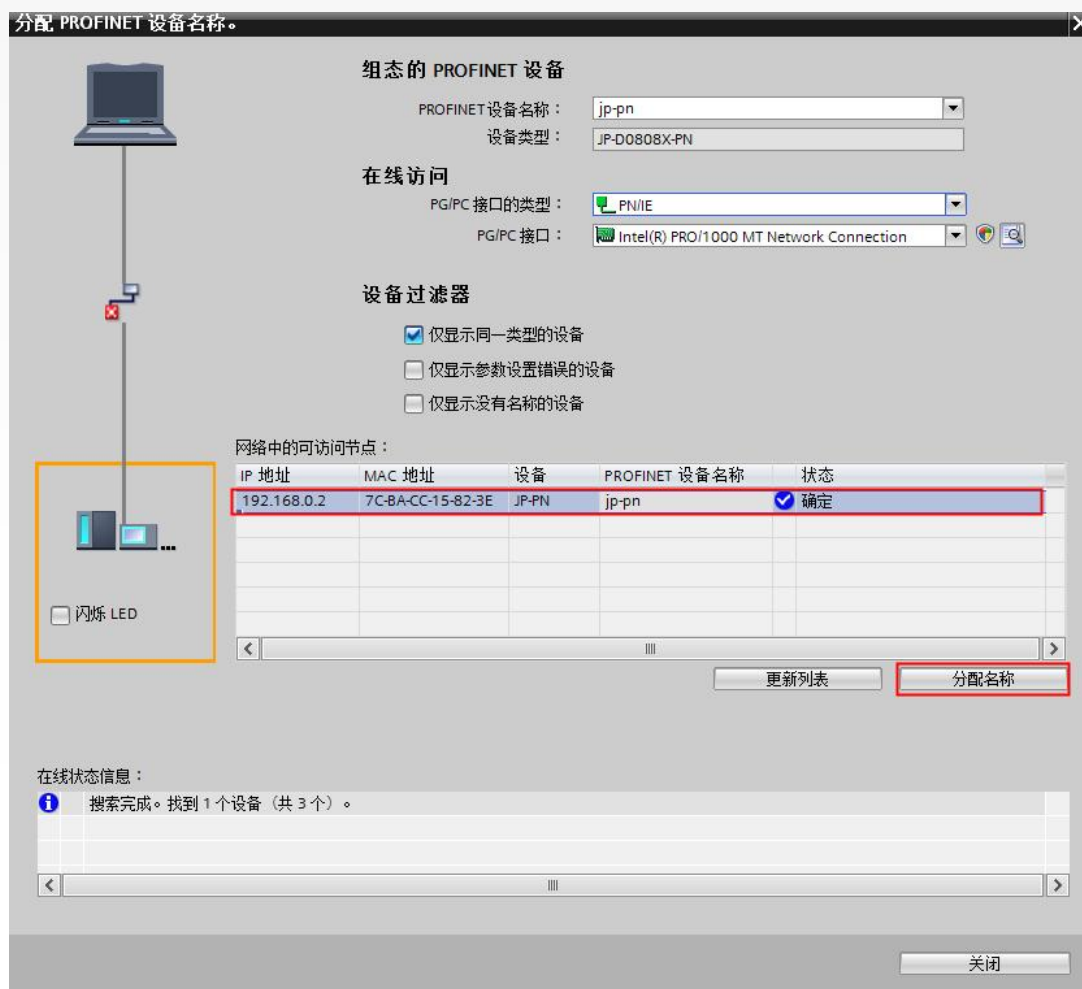
④ Click "OK" to complete the allocation.



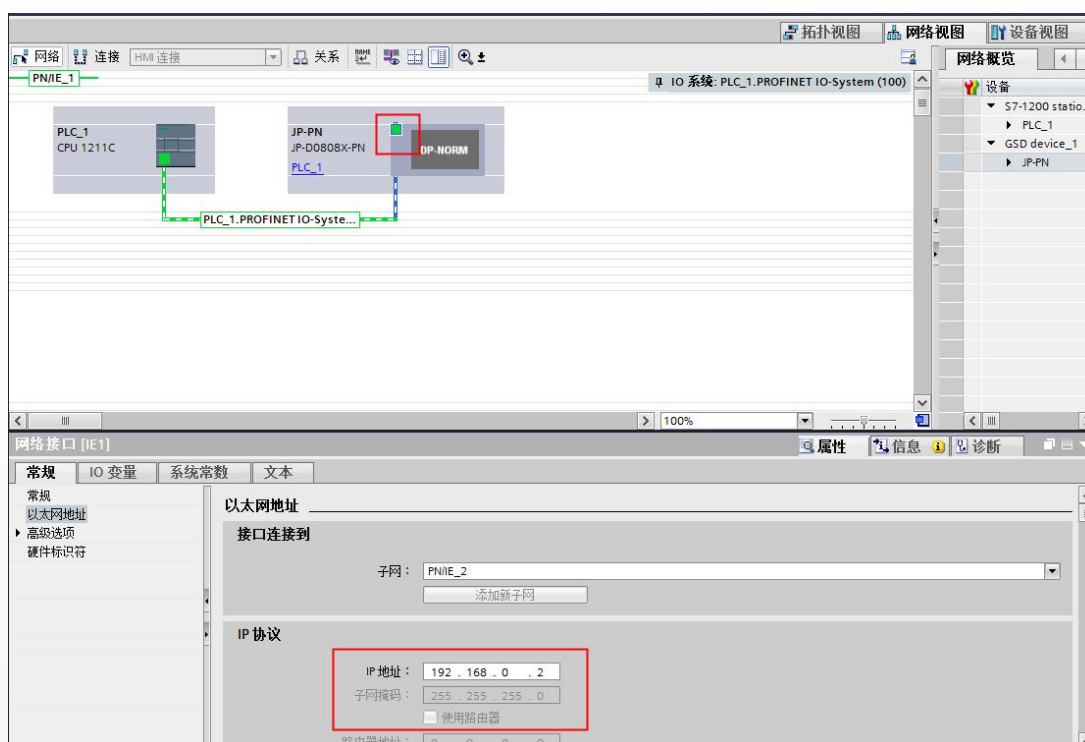


⑤ Distributed IO Name Allocation, click "Assign Device Name"

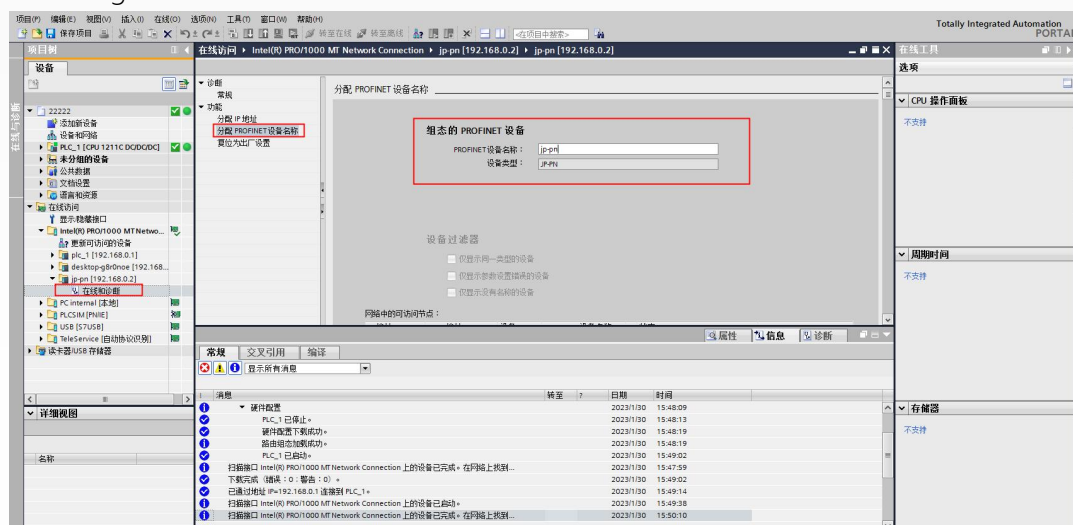




⑥In the Ethernet address, the IP address and the Profinet device name (the device name can be set manually or automatically, as long as it corresponds to the IP address and



⑦ Device name allocation method 1 (using software settings): As shown in the figure below, right-click and then click "Online and Diagnosis", click "Assign Name", and subsequently assign the device name. After the allocation is completed, click "Assign Name" again.



- (1). Click on "Online Access" and select the network card of the connected device;
- (2). Click on "Update Accessible Devices" to scan the actual topology structure;
- (3). Based on the MAC address on the slave enclosure, select the device corresponding to the configured topology and click on "Accessible Devices", then click on "Online Diagnosis";
- (4). Open the module diagnosis interface and click on "Assign Device Name";
- (5). Assign the device name. **The device name must be consistent with the device names in the configured topology.** (The device name corresponds to the name in the configuration; for example, if the device configuration name is JP-PN, the corresponding device name should be assigned as JP-PN, and so on for the name assignment of the devices in the configuration. The device name can be self-defined, but it must correspond to the device name scanned online);
- (6). Click on the "Assign Name" button;
- (7). Confirm that the message bar notifies the successful assignment of the name.

Official website



先进自动化控制及工业网络技术



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